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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEE, CHEUKFAN

ART UNIT PAPER NUMBER

2622

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/786,680

Applicant(s)

ONISHI ET AL.

Examiner

Cheukfan Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 14-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-13 and 20 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Applicant's election with traverse of Species a), corresponding to claims 1-13, 19 and 20, in the reply filed on April 19, 2004 is acknowledged. The traversal is on the ground(s) that the search areas are the same for both the elected claims and non-elected claims. This is not found persuasive because, though the search areas are the same, the structures of components of the two Species are so different such that the two Species, if worked on at the same time, would place a burden on the examiner. Further, Applicant states that claims 1-13, 19 and 20, which read on the elected species, are generic to all of species outlined in the Office Action. However, claims 1-13, 19 and 20 clearly showing the structural details, for example, the "plurality of partitions", are not generic to the two species because such structural details are not claimed in claims 14-18 corresponding to the non-elected species.

The requirement is still deemed proper and is therefore made **FINAL**.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Sawase et al. (U.S. Patent No. 6,014,231).

Regarding claim 1, Sawase et al. discloses an image reading apparatus comprising a substrate (6) which has an obverse surface provided with a plurality of light sources (LEDs 7) arranged in a row (Figs. 2 and 4), a case including a hollow portion (light passage 2b) extending along the row of the light sources for guiding light emitted from the light sources toward an image read line (on the upper or outer surface of glass sheet 3), a lens array (5) for forming an image of a document (10) onto a plurality of light receiving elements (8) arranged in a row (Figs. 2 and 4), the document (10) being disposed to face the image read line (on the upper or outer surface of glass sheet 3). A plurality of partitions (2c) divides the hollow portion (light passage 2b) longitudinally into a plurality of individual passage sections, each of the light sources (LEDs 7) being confronted by a surface for blocking light emitted from the light source (col. 2, lines 45-55, col. 2, line 56 - col. 3, line 40). With regard to the claimed "a surface" in "wherein each of the light sources is confronted by a surface for blocking light emitted from the light source", the claimed surface is met by a side surface of the light passage (2b in Fig. 2) since the side surface blocks light emitted from each light source (LED 7) from further propagation in directions substantially parallel to the width direction of the substrate (6).

Regarding claim 2, according to Fig. 4, the partitions (2c) are integral with the case.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 11, 12, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawase et al. (U.S. Patent No. 6,014,231) and Iso et al. (U.S. Patent No. 5,489,995).

Regarding claim 3, Sawase et al. discussed for claim 1 above differs from the claimed invention in that the partitions shown (Fig. 4) are not arranged at a substantially constant pitch. That is because the light sources are not arranged at a substantially constant pitch. However, the equally spaced linear arrangement of light sources (LEDs) is not novel and is taught by Iso et al. (Fig. 22, LED light source 209).

In Sawase et al., the light sources (LEDs 7) are arranged in a linear array such that the density of light sources is higher near each end of the substrate (6) than at the middle portion. Although not explained in Sawase et al., one of ordinary skill in the art would have realized the purpose of such arrangement, which is to provide higher intensity of light at each end to compensate for the lower light level that usually exist at the end of the light source arrangement in order produce a more even light output along the longitudinal axis of the substrate or light source arrangement. However, if absolute uniform light output is not a critical factor, or if other means is employed to compensate for such lower light intensity at said ends, complicated calculation for different measurement of spaces between adjacent light sources (LEDs 7) is not necessary. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

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invention was made to have the partitions of Sawase et al. arranged at a substantially constant pitch longitudinally of the hollow portion (light passage 2b) and to have the light sources (LEDs 7) equally allocated to the individual sections as claimed.

Regarding claim 11, Sawase et al. further discloses a groove in the case (2) (shown in Fig. 2) for receiving the lens array (5). The case is also provided with a transparent plate (3) having an obverse surface (upper surface of 3 in Fig. 2) providing the image read line.

Sawase et al. differs from the claimed invention in that the transparent plate (3) does not include a projection formed on the reverse surface (bottom surface of 3 in Fig. 2) thereof for engagement with the lens array for forcing the lens array toward the bottom of the groove.

Iso et al., also discussed for claim 1 above, further discloses a transparent plate (4) having a projection formed on its reverse surface (bottom surface of 3 in Fig. 11) for engagement with a lens array (7) for forcing the lens array (7) toward the bottom of a groove in which the lens array (7) is received.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the shapes of the transparent plate (3) and case of Sawase et al. to provide a transparent plate having a projection for engagement with the lens array for forcing the lens array toward a bottom of the groove as taught by Iso et al. for further support of the lens array.

Regarding claim 12, in Sawase et al. and Iso et al. discussed for claim 11 above, both the lenses (5 and 7, respectively) each comprise a plurality of lenses arranged in a

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row (or at least a row) and held in an elongated holder (Fig. 4 of Sawase et al. and Figs. 11 and 22 of Iso et al., respectively). In Iso et al., the projection of the transparent plate (4) extends longitudinally of the holder for engagement therewith. Thus, based on the reasons of obviousness discussed for claim 11 above, the projection of the transparent plate of the apparatus of Sawase et al. and Iso et al. extends longitudinally of the lens holder for engagement therewith.

Regarding claim 20, the claim recites all limitations of claim 1 and claim 11 which depends upon claim 1, except "wherein each of the light sources is confronted by a surface for blocking light emitted from the light source." Claim 20 is rejected for the reasons given for claims 11 and 1. Please refer to the discussions for claim 11 and claim 1 above.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sawase et al. (U.S. Patent No. 6,014,231) and Iso et al. (U.S. Patent No. 5,489,995) as applied to claim 11 above, and further in view of Ogura et al. (U.S. Patent No. 5,990,622).

Regarding claim 13, Sawase et al. and Iso et al. discussed for claim 11 above does not include at least one pair of engagement means for preventing the transparent plate from moving far away from the lens array. However, such engagement means are taught by Ogura et al. (Figs. 9 and 10, col. 7, line 31 – col. 8, line 27). In Ogura et al., a frame or case (4) has side walls defining an opening in which the plate (1) is fitted, the plate (1) inherently comprises transparent material for light reflected from a document to pass through. Both the plate (1) and the side walls of the case or frame (4) are

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provided with at least one pair of engagement means (Fig. 9) for preventing the plate from moving far away from the elements within the case or frame (4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the idea of Ogura et al. provide the transparent plate and side walls of the case of Sawase et al. an Iso et al. with at least one pair of engagement means to prevent the transparent plate from moving far away from the lens array.

7. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawase et al. (U.S. Patent No. 6,014,231).

Regarding claims 4-6, Sawase et al. does not explicitly disclose a light-reflecting surface of each of the partitions (2c in Fig. 4) or that the surfaces of the hollow portion (light passage 2b) and portions of the obverse surfaces of the substrate (6 shown in Fig. 4) are white. It is noted that Sawase et al. teaches improving the efficiency of light reception in the light-receiving element by disposing the light-emitting element nearer the surface of the original document. This means that higher intensity of light produced by the LEDs at the surface of the document is desired. One of ordinary skill in the art would have realized the fact that other approaches, such as making the surrounding surface(s) reflective or white, also increase the intensity of the light at the document surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the surfaces of the partitions, the surfaces of hollow portion (light passage 2b) and portions of the obverse surface of substrate (6) of

Sawase et al. light reflect-reflective by coating with a light-reflecting material or white material or other appropriate way to increase the light intensity at the document surface.

8. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawase et al. (U.S. Patent No. 6,014,231) in view of Kawai et al. (U.S. Patent No. 5,905,583).

Regarding claim 7, the obvious image reading apparatus of Sawase et al. is discussed for claim 6 above. Sawase et al. does not disclose the material used to make the case that includes the hollow portion (light passage 2b). However, a light source frame (10) made of a white resin to increase light intensity of a light source (LED) is taught by Kawai et al. (Fig. 53, col. 21, lines 55-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the idea of Kawai et al. to make the case of the obvious apparatus of Sawase et al. with white resin, which is a high reflecting efficiency, to increase light intensity of the light source (LEDs).

Regarding claim 8, though supported on the same substrate (6), the light receiving elements (8) and the light sources (LEDs 7) are disposed with separate compartments within the frame (2 in Fig. 2). The portions of the frame (2) surrounding the light receiving elements (8) also serve to prevent reflection of light emitted by the light sources (LEDs 7).

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9. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claim 19 is allowed.

11. The following is an examiner's statement of reasons for allowance:

Claims 9, 10 and 19 would be/is allowable over the prior art of record including the closest prior art reference Sawase et al. (U.S. Patent No. 6,014,231) because the prior art (Sawase et al.) does not teach auxiliary elements provided on the obverse surface of the substrate (6), which auxiliary elements are covered by at least selected ones of the partitions as claimed in claims 9 and 19. Claim 10 depends upon claim 9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Matsumoto (U.S. Patent No. 6,147,339) discloses an image sensor employed for portable image inputting device (Figs. 18-23).

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (703) 305-4867. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheukfan Lee
June 15, 2004

A handwritten signature in black ink, appearing to read "Cheukfan Lee", with a stylized flourish above the name.